caterpillar, but I neglected to take note of the dates for record. When the parasite larva is full-grown, the caterpillar dies on the leaf where it has been feeding and the parasite larva emerges from the skin and spins its cocoon in this position, the empty caterpillar skin remaining attached at one end of the cocoon. One parasite larva was observed to commence spinning the network for its cocoon before it had fully issued from the skin of the caterpillar. The cocoon is cylindrical, symmetrically rounded at both ends, about 6 mm. long, rather dense, white with a few dark patches. In one instance observed, the adult issued from the cocoon 8 days after the cocoon was commenced. The life cycle, though not accurately determined, is probably about 3 or 4 weeks. A short life cycle as compared with that of its hosts.

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## Notes on Rhyncogonus extraneus (Col.).

BY O. H. SWEZEY

(Presented at the meeting of October 7, 1926.)

This weevil was described by Perkins in The Fauna Hawaiiensis, III, Part VI, p. 651, 1910. The date of capture was not given. The habitat given is, "Oahu; lower slopes of the mountains, below the forest." In correspondence with Dr. Perkins concerning this and other species of Rhyncogonus, the following remarks on *extraneus* were made in a letter dated March 20, 1923:

> "The original specimens came from the lower slopes of the mountains (below forest) Kalihi-way, and I think were found on one of the common Verbenaceous weeds. Either this or something very similar occurred years ago in Kau, near Kapapala (Monsarrat's ranch), also I believe on the same plants. I seem to have none of these Hawaii specimens myself at this time, but there ought to have been some at the Board of Agriculture lab. or at the H. S. P. A. Experiment Station. Possibly they were never mounted, as we were in the thick of the lantana campaign at the time. It is, however, possible that the Kau species was the same as

one Giffard sent to Dr. Sharp from Kona; also many years ago either Henshaw or Koebele collected a species on Eben Low's ranch or thereabouts. I had one of these unmounted (in alcohol) and I may still have it, though I never pinned it up.

"I have always had great doubt whether *R. extraneus* was a real native; as is indicated by the specific name, I believe it will be found elsewhere." . . . . . .

"In the Introduction to the Fauna Hawaiiensis on page cxx where in discussing the distribution of Rhyncogonus, I said: 'None are known from Hawaii,' I really meant to say that the genus was not represented by *endemic* species on Hawaii."

Besides the specimens collected by Dr. Perkins in the vicinity of Kalihi, the only other collections of this beetle on Oahu have been made from a colony in field 20 of the Oahu Sugar Co. This field is located in the part of the plantation towards the Waianae Mountains. It is on the Kunia road about a mile north from the government road leading to Ewa and Waianae. In this field, a number of the beetles were collected by Terry, December 31, 1904. No significance was attached to this at the time, and no subsequent attention was given to it. Until November 29, 1922, no more observations were made, but apparently the colony had been increasing during this interval, for on the latter date the beetles were quite abundant on the leaves of young cane, and their grubs were numerous in the soil. Some of them were feeding on the decaying cane seed cuttings in the ground.

On December 29, further observations were made, and it was found that the colony was very extensive, spreading over an area several hundred yards across, but concentrated most abundantly in two smaller areas. The beetles were found both on cane leaves and on weeds. However, no eating was done on the cane leaves. Such weeds as Portulaca and Amaranth growing on ditch banks were eaten to some extent. Quite a lot of the beetles were in pairs. Some were collected alive, and oviposition was secured. Of 140 beetles collected on cane leaves, 46 were females and 94 were males. Thirty-one of the females were dissected and found to contain eggs as follows: 6, 8, 4, 15, 13, 4,

11, 28, 3, 4, 9, 6, 11, 2, 7, 4, 3, 9, 12, 7, 1, 0, 6, 16, 12, 3, 5, 6, 12, 6, 9. A total of 242, and an average of 7.8 eggs per female.

Experiments were made in confinement to determine the food plants of the beetles. They ate Portulaca and Amaranth (probably Euxolus) readily; Hibiscus, Crotalaria and Emilia very little; cane, koa and Waltheria not at all. Grubs in confinement were found to eat into pieces of cane at cut surfaces, and to eat fresh cane roots.

In ovipositing, clusters of from two to a dozen eggs were placed side by side in a crease or wrinkle of the leaf or turned over edge and held in position by an adhesive secretion. The egg is white, smooth, cylindrical, rounded at ends, sometimes slightly curved, 1.2 mm. long, .6 mm. in diameter. The eggs hatch in about 8 days, and the young grubs take 3 or 4 months to grow.

Since 1922, whenever this colony in field 20 has been visited, a few beetles could be found, sometimes more numerous than at other times, but whether there is any definite seasonal occurrence has not yet been determined. At the latest visit by Mr. Hadden and myself, September 14, we secured 3 or 4 dozen beetles in about 20 minutes. The cane at the time was of large size, and searching was difficult except along ditch banks. The beetles we obtained, however, were mostly from the cane leaves, and quite high up at that. No signs of cane leaves having been eaten by the beetles was observed.

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## Foreign Sphingidae in the Collections of the Experiment Station of the Hawaiian Sugar Planters' Association.

BY O. H. SWEZEY

(Presented at the meeting of October 7, 1926.)

Recently the specimens of foreign Sphingidae in the collections of the Experiment Station of the Hawaiian Sugar Planters' Association were sent to Mr. B. Preston Clark, Boston, Mass., for determination. The list of these follows. They are arranged in the order that they occur in "The Revision of the Sphingidae," by Rothschild and Jordan, Novitates Zoologicae, IX, Supplement, 1903.